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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,013	06/21/2001	Takashi Nojima	35.C15470	5724

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,013

Applicant(s)

NOJIMA, TAKASHI

Examiner

Julian D. Huffman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-28 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 29-44 is/are rejected.
- 7) ☒ Claim(s) 7-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 30-32, 34, 38-40 and 42-44 are objected to because of the following informalities:

It is respectfully suggested that the phrase "maintain a distance to said recording means constant" be changed to "maintain a distance to said conveying means constant" since the purpose of the biasing force is to maintain constant distance between the detector and the scale (fig. 3).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 29-44 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claims 29, 33, 37 and 41 the method claims do not manufacture the conveying roller, but rather a scale provided coaxially with the conveying roller.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaki et al. (U.S. 5,678,144).

Osaki et al. discloses a method for producing a scale provided coaxially with a conveying roller and adapted to detect conveyance rotation angle, the method comprising the steps of:

effecting rotation angle allotment for recording medium conveyance, on the conveying roller, to thereby form a scale for detecting conveyance rotation angle (fig. 1, column 9, line 66-column 10, line 7).

Osaki et al. does not expressly disclose holding a recording medium conveyance outer peripheral portion of the conveying roller.

However, it would be necessary to support the roller and hold it in a stationary manner while applying the marks and thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to hold the recording medium

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outer conveyance peripheral portion of the conveying roller, so as to provide a means to support the conveying roller while the marks are placed thereon.

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaki et al. as applied to claims 1 and 3 above, and further in view of Morioka et al. (U.S. 5,450,106).

Osaki et al. does not disclose a magnetic encoder.

Morioka et al. discloses that magnetic encoders are not influenced by dust (column 1, lines 16-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a magnetic scale on the conveying roller as opposed to an optical type, for the purpose of eliminating reading errors caused by dust.

7. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn in view of Osaki.

Youn discloses an ink jet recording device with a conveying roller (fig. 1, element 2).

Youn does not disclose an encoder.

Osaki et al. discloses a conveying roller provided with a scale for detecting conveyance rotation angle (fig. 1, element 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the conveying roller of Youn with the conveying roller of Osaki et al. for the purpose of providing rotational information to a controller of the printer.

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8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osaki et al. in view of Youn as applied to claim 5 above, and further in view of Abe et al. (U.S. 5,021,809).

Youn in view of Osaki et al. does not expressly disclose how the ink is jetted.

Abe et al. discloses electrothermal converters for ejecting ink (column 3, lines 51-57, claim 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use electrothermal converters for the purpose of providing a means to perform high density recording using a low cost ejector which is easy to manufacture.

9. Claims 29, 33, 35, 37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn in view of Osaki et al.

With regards to the claims, the method for manufacturing the conveying roller does not further limit the apparatus.

Youn disclose an ink jet printer with conveying means having a conveying roller (2) and a pinch roller (6) in close contact with the conveying roller.

Youn does not disclose an encoder means.

Osaki et al. discloses a conveying roller provided with a scale (fig. 1, element 1), and a detector (8) for detecting conveyance rotation angle.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the conveying roller of Youn with the conveying roller of

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Osaki et al. for the purpose of providing rotational information to a controller of the printer.

10. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Youn in view of Osaki et al. as applied to claim 35 above, and further in view of Abe et al.

Youn in view of Osaki et al. does not expressly disclose how the ink is jetted.

Abe et al. discloses electrothermal converters for ejecting ink (column 3, lines 51-57, claim 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use electrothermal converters for the purpose of providing a means to perform high density recording using a low cost ejector which is easy to manufacture.

Allowable Subject Matter

11. Claims 13-28 are allowed.

With regards to claims 13-28, the prior art of record does not disclose integrating the conveying roller with a conveyance angle detection pattern writing member coaxially mounted with the conveying roller.

12. Claims 7-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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With regards to claims 7-12, the prior art of record does not disclose the detecting device provided so as to be of the same phase as the driven roller with respect to the axis of the conveyance outer peripheral portion of the conveying roller.

13. Claims 30-32, 34, 38-40 and 42-44 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, and the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose the detecting means biased to a magnetic scale of said conveying means to maintain a distance constant in a recording medium conveying direction.

Pertinent Prior Art

14. U.S. 4,673,303 to Sansone et al. is cited as indicative of the current state of the art.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (703) 308-6556. The examiner can normally be reached on Monday through Friday from 9:30 a.m. to 6:00 p.m.

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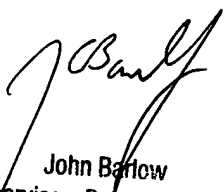
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached at (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722. Faxes requiring the immediate attention of the examiner may be sent directly to the examiner at (703) 746-4386. Note that this number will not automatically send a confirmation that the fax was received.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JH

July 15, 2002



John Barlow
Supervisory Patent Examiner
Technology Center 2800